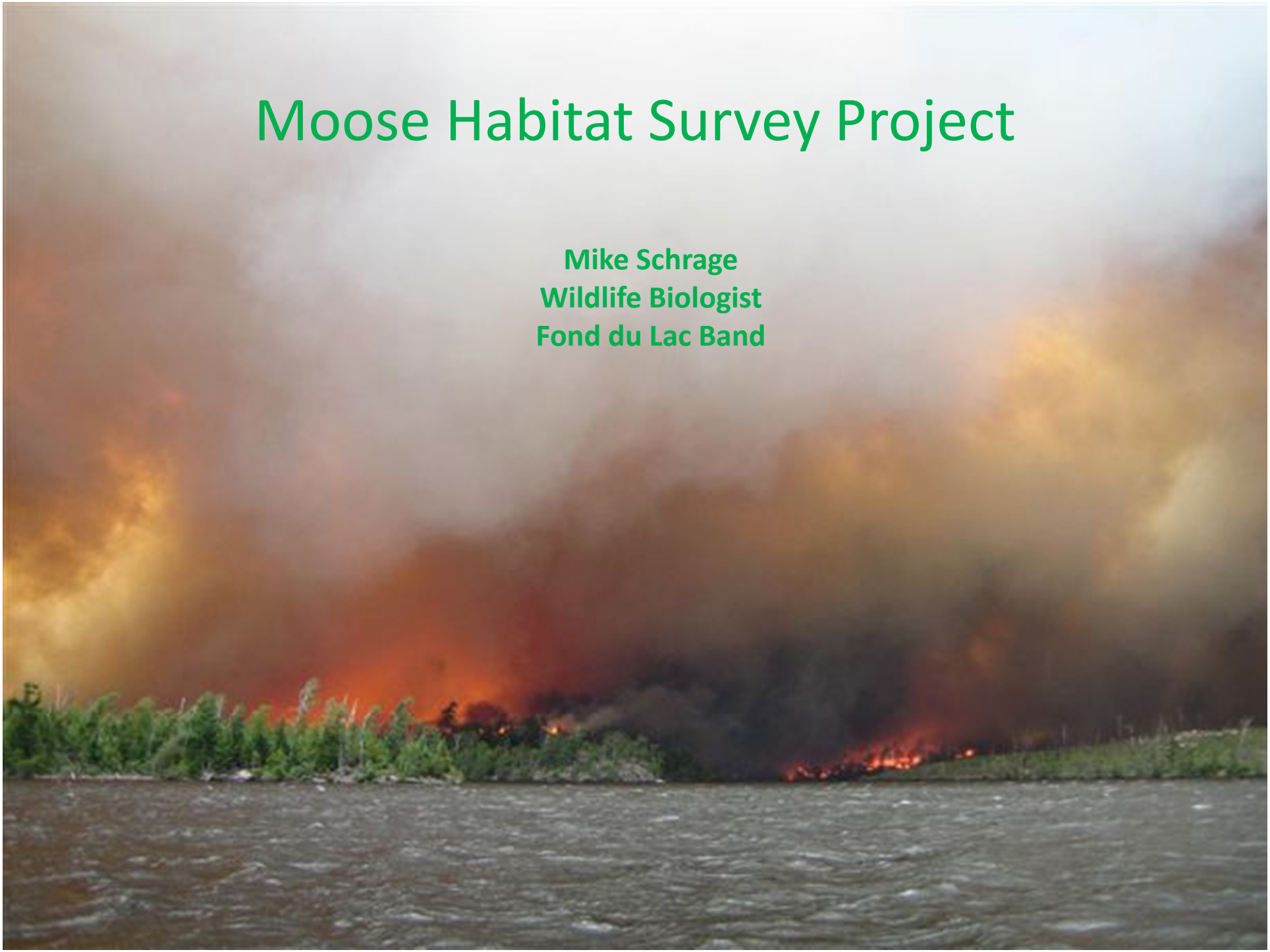
Moose Habitat Survey Project



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Why a moose habitat survey?

- Habitat can play a role in moose recovery
- Understand moose response to large habitat changes
- Public/media want to know impacts
- Answers to the public/media is often speculation, anecdotal or based on research elsewhere
- Managers need to know how to allocate time and $$ to have greatest impact on moose
- Mngmt decisions made already about allocating effort and $$ with no local information

Problem….

- Limited time, people and especially money for a whole new study/survey
- What can we get using current budgets?

Survey Proposal

- Look at large landscape level changes
- Piggyback habitat survey onto existing moose population survey and utilize same techniques and survey plots
- Fly the same habitat plots every year for an extended period (20 years).
- Initiate in 2012

Advantages

- Minimal extra costs and effort
- Moose demographic data from habitat survey can be incorporated into population survey
- Population estimate enhanced and direct comparison with previous results still possible
- Direct comparisons of habitat survey plots and data from all other plots possible

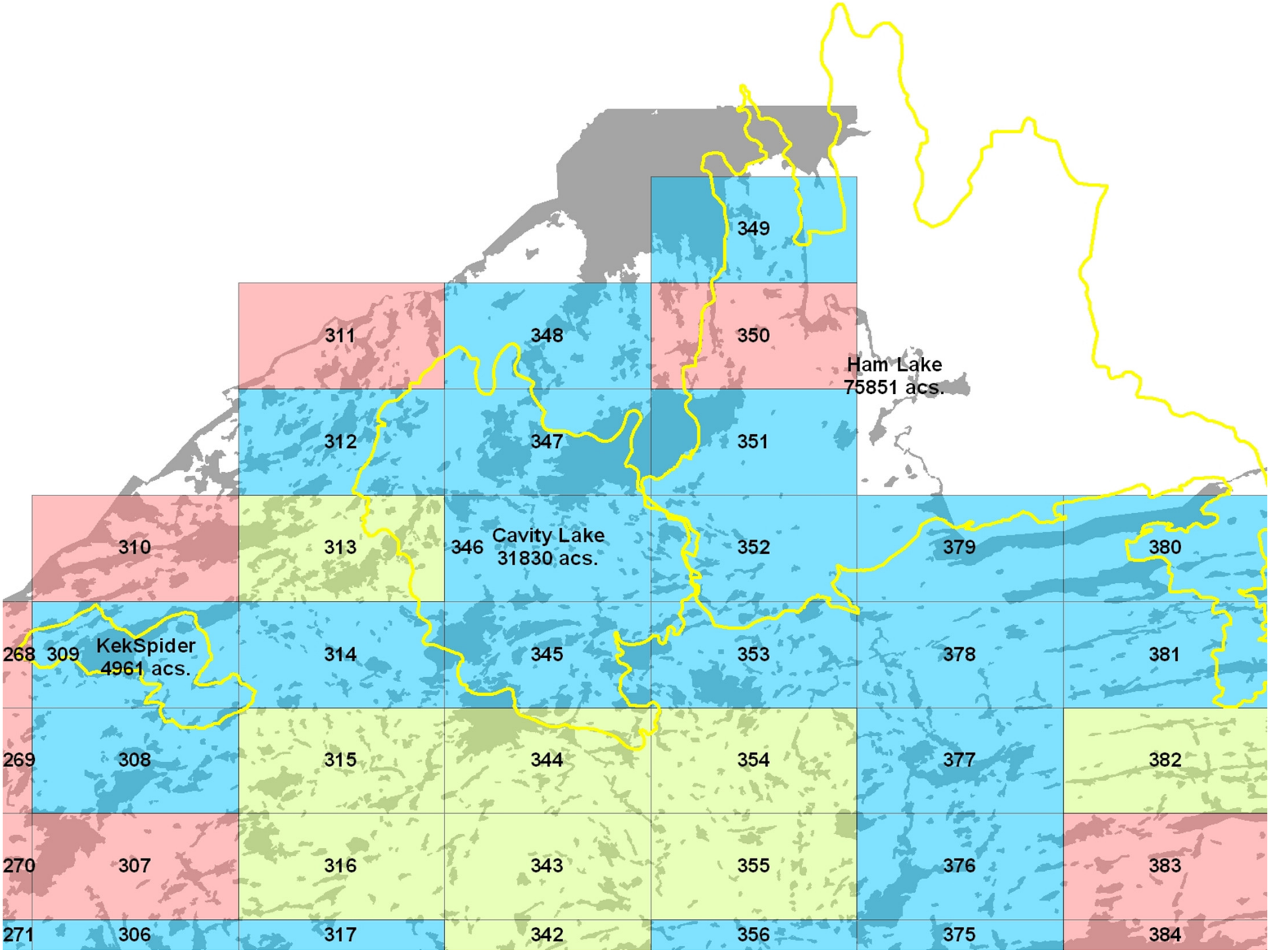
Three treatment types selected based on biologists' feedback

- Wildfire
- Rx Fire
- Timber Management

Nine permanent "habitat" plots selected, 3 in each treatment type.

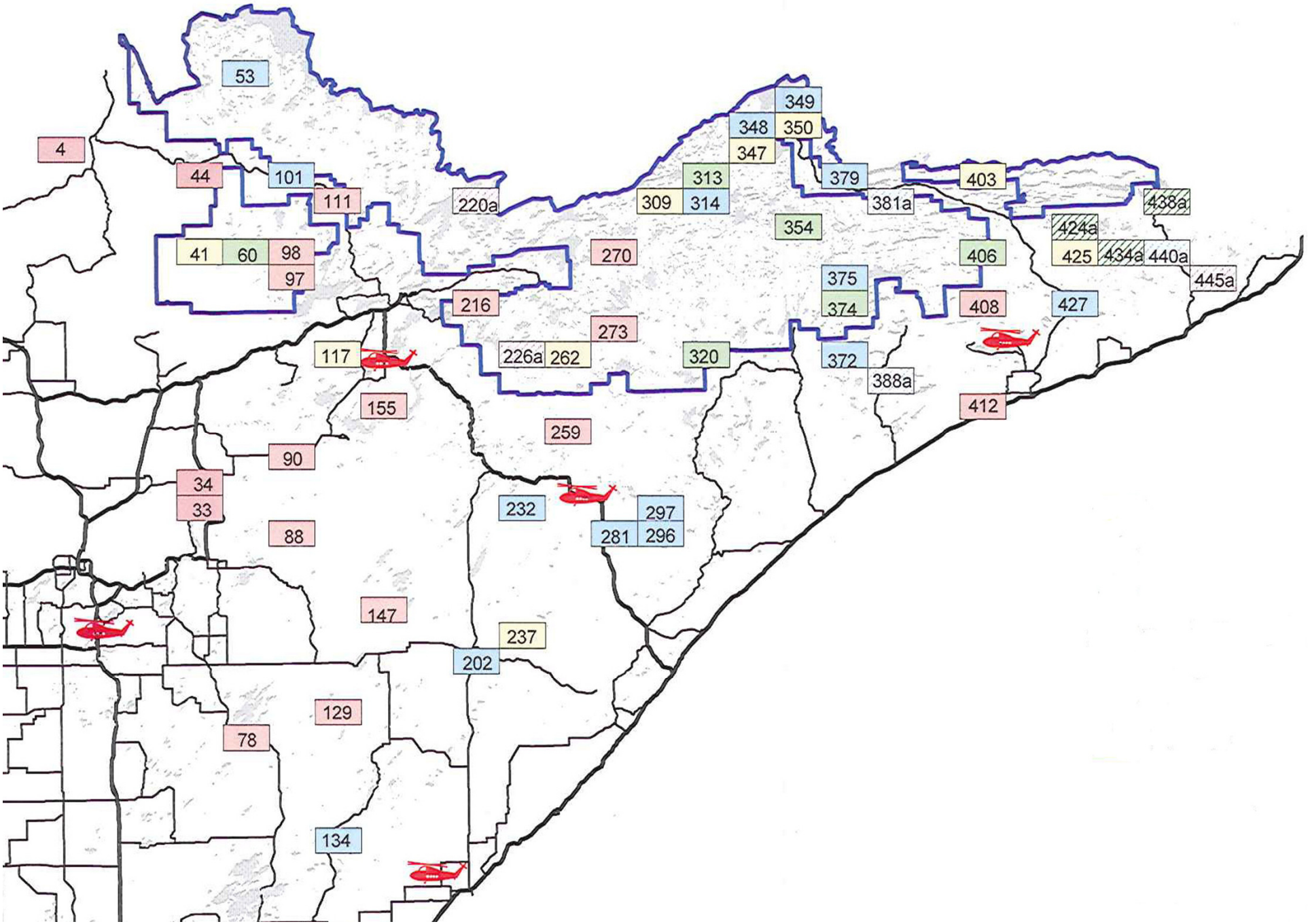
Other considerations for plot selection

- Initial list of 24 candidate plots
- East/west geographic distribution across moose range
- Was pretreatment survey data available?
- Time since treatment
- Was enough of a survey plot impacted by the treatment to expect a change in moose numbers?
- One plot in multiple treatments preferred over multiple plots in the same treatment


349
311
348
350
Ham Lake
75851 acs.
312
347
351
310
313
346
Cavity Lake
31830 acs.
352
379
380
268
309
KekSpider
4961 acs.
314
345
353
378
381
269
308
315
344
354
377
382
270
307
316
343
355
376
383
271
306
317
342
356
375
384

Costs

- $7660 total
  - $6660 in additional helicopter flight time
  - $1000 in travel for survey crew
- 1.5 – 2 days additional survey time


53
4
44
101
111
220a
349
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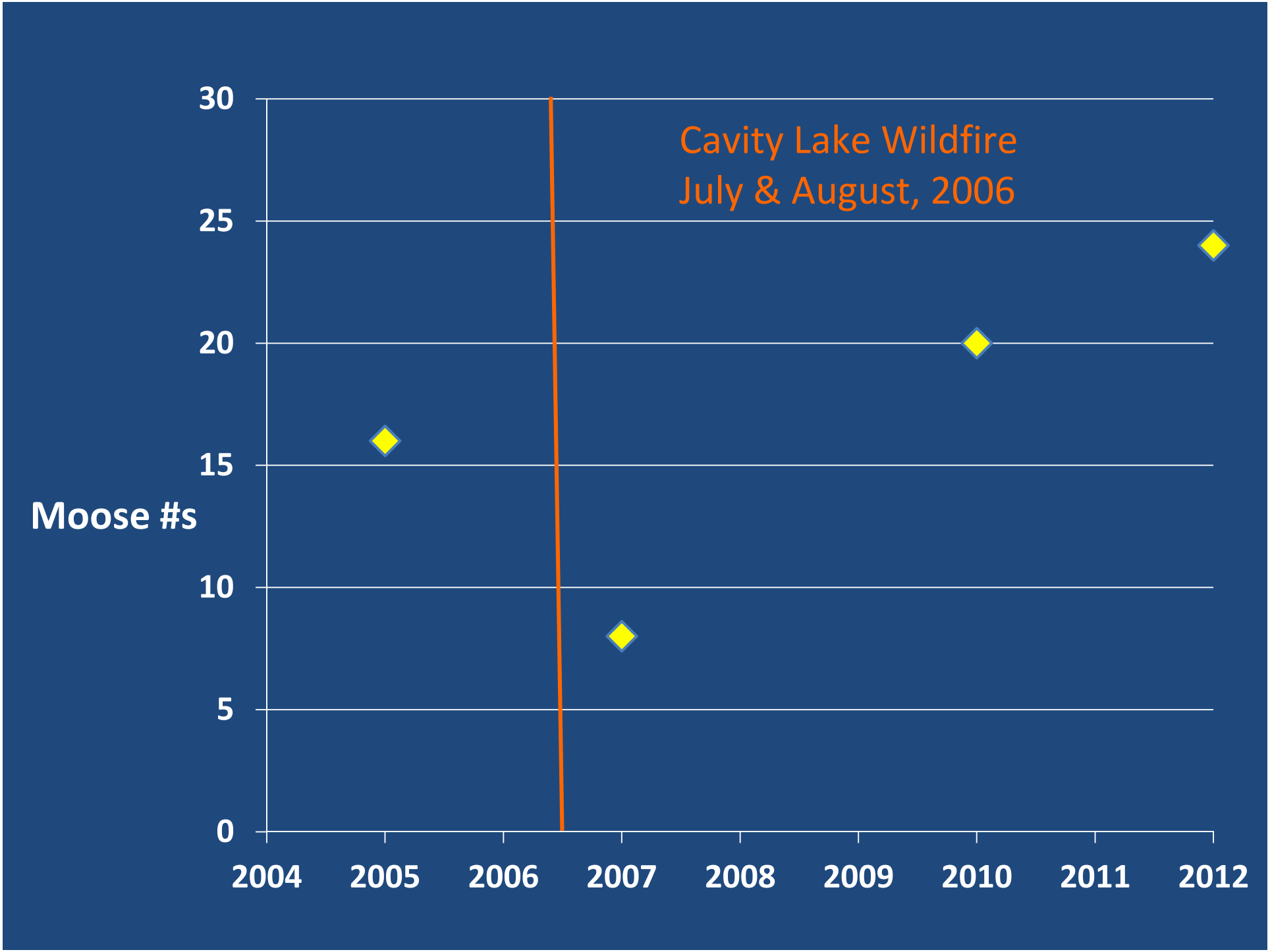
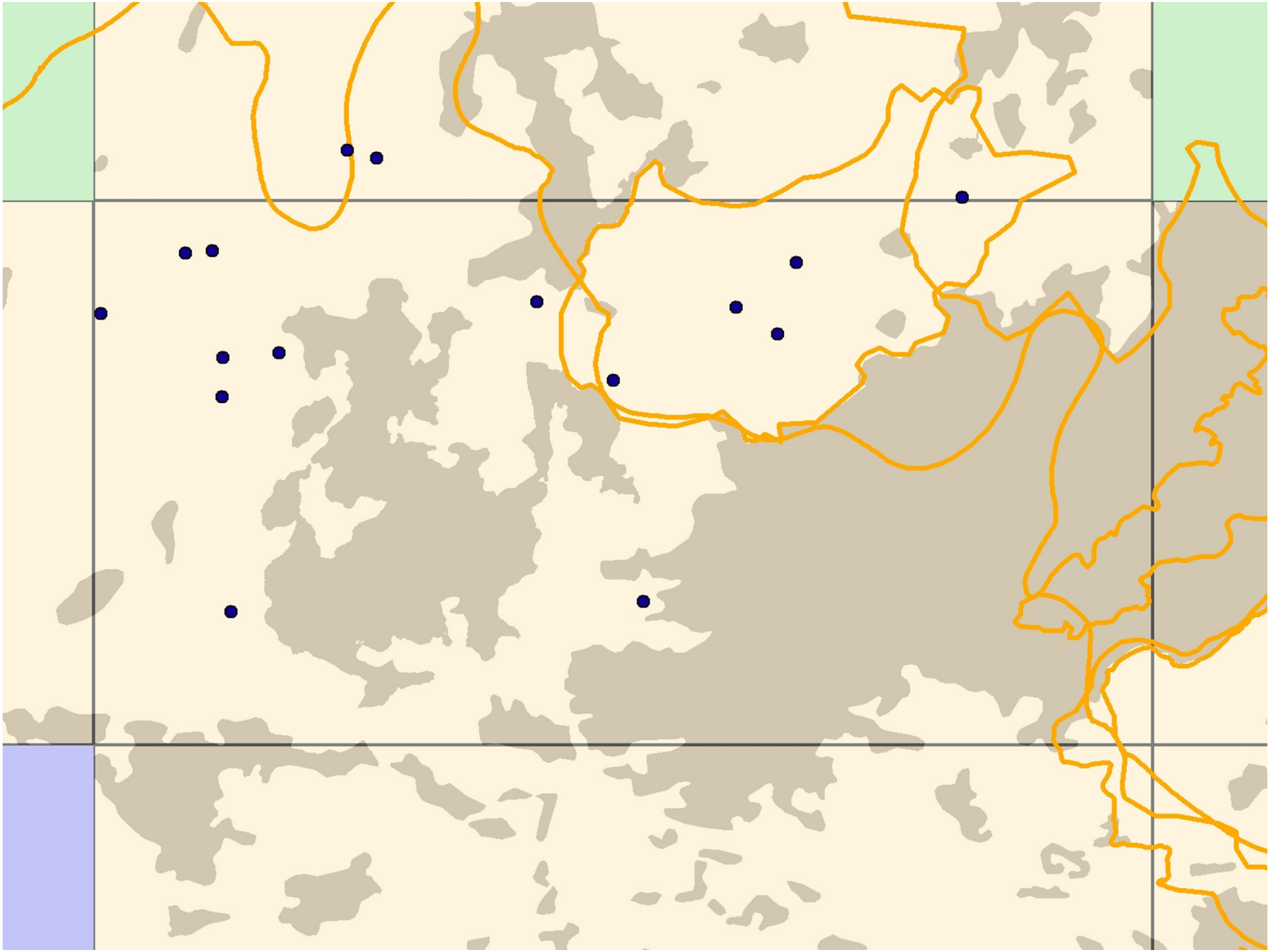
424a
425
434a
440a
41
60
98
97
270
406
375
374
445a
216
408
427
273
117
226a
262
320
372
388a
155
412
259
90
34
33
232
297
281
296
88
147
237
202
129
78
134


TOUGHBOOK
DNR Survey - Map View -- MooseSurvey_2012_Crew2.lvs
Moose Survey
Moose Observations
OBS ID
41
PLOT ID
0
BULLS
0
TOTAL
-99
UNKNOWN
0
TOTAL WITH HAIR LOSS
-99
COWS
W/O CALVES
0
W/ 1 CALF
0
W/ 2 CALVES
0
LONE CALVES
0
PCT VISUAL OBSTRUCTION
-99
0
5
10
15
20
25
30
35
40
45
OK
Cancel
GPS
x 610,012.16
y 5,253,470.60
237
39_3
38_2
37_3
GPS Status
Not Connected
No Reception
Track Count: 0
2/3/2012
5:12 PM
Scale = 1:50,000
deer
Survey-1


Cavity Lake Wildfire
July & August, 2006
Moose #s
30
25
20
15
10
5
0
2004
2005
2006
2007
2008
2009
2010
2011
2012



Outcomes

- Over time moose responses to treatments may be detected
- Comparisons of moose data within and between treatment types (wildfire, Rx burn, timber mngmt) possible
- Future predictions made with more confidence as to what kind of treatment will affect a positive moose response
- Allow more confident predictions how moose will respond to similar treatments and how that moose response changes over time
- Decisions where and how to prioritize funding and effort for moose habitat can be made with more confidence

Cautions

- Moose responses to habitat change at other seasons of the year not known
- Moose response may be due to dispersal from neighboring habitat (or something else) and not better reproduction or survival
- If variability of annual results is high, it will take longer and be more difficult to detect change – a long term commitment is needed!
- Timber mngmt or Rx burns may not happen as originally planned
- Temptation to use data for inappropriate conclusions